



Department
for Environment
Food & Rural Affairs

www.gov.uk/defra

Guide to UK Air Pollution Information Resources

July 2013



Llywodraeth Cymru
Welsh Government



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Government

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Introduction

Air pollution can cause both short term and long term effects on health and many people are concerned about pollution in the air that they breathe. These people may include:

- People with heart or lung conditions, or other breathing problems, whose health may be affected by air pollution.
- Parents, carers and healthcare professionals who look after someone whose health is sensitive to pollution.
- People who want to know more about air pollution, its causes, and what they can do to help reduce it.
- The scientific community and students, who may need data on air pollution levels, either now or in the past, throughout the UK.

Free, detailed, clear and easy to use information on air pollution in the UK is available for all these purposes. It is provided by the Department for Environment, Food and Rural Affairs (Defra), together with the Devolved Administrations of Scotland, Wales and Northern Ireland.

This document provides a guide to the air quality resources that are available, and how to access and use it. It explains:

- The air quality information that is available to the public and where to find it.
- The Daily Air Quality Index used in pollution forecasts and summaries.
- Other sources of information which may be useful.

What public information is available?

UK-AIR online

Defra provides air quality information online, via its UK Air Information Resource website (UK-AIR), at <http://uk-air.defra.gov.uk> . On UK-AIR, you can find:

- **Forecasts:** Defra provide forecasts of expected air pollution over the next 24 hours for 16 regions of the UK (called “zones”) and 16 urban areas within them (called “agglomerations”), at <http://uk-air.defra.gov.uk/forecasting/>
- **Latest Pollution Summary** <http://uk-air.defra.gov.uk/latest/> . This shows the latest measured levels of air pollution, providing a retrospective view of pollution levels for the 16 regions of the UK.
- **Historical data** from the UK’s national networks of air pollution monitoring sites and national modelling can be downloaded from the UK-AIR data archive at <http://uk-air.defra.gov.uk/data> . Data from the oldest automatic monitoring sites go back to 1972, and there are data going back to 1961 from sites using simpler non-automatic monitoring.
- **UK Air Quality Data Catalogue** is a searchable catalogue of UK air quality monitoring, modelling and emissions datasets. For example, it tells you what data are available, who the responsible owner is and where to find the datasets. <http://uk-air.defra.gov.uk/data/data-catalogue> .
- **Information on the UK’s air quality monitoring.** UK-AIR provides information on how air quality is monitored in the UK, and where the measurements are located. This includes an interactive map showing all the UK monitoring sites.
- **Information on science and research into air pollution.** The UK-AIR library at <http://uk-air.defra.gov.uk/library/> provides a comprehensive resource of the latest scientific and policy documents related to air pollution in the UK. Details on the UK’s air pollution modelling programme are explained with links to data.
- **UK-AIR and NAEI Mapping Portals:** Geographic Information Systems (GIS) toolkits are available online in beta version at <http://uk-air.defra.gov.uk/data/gis-mapping> and <http://naei.defra.gov.uk/data/gis-mapping> to allow users to view and interact with mapped concentration and emissions data. Datasets can be downloaded for specific areas or the whole of the UK.



Air Quality Websites for Scotland, Wales and Northern Ireland

Each of these regions has its own dedicated air quality website:

- **Air Quality in Scotland.** The Scottish Government's website at <http://www.scottishairquality.co.uk> contains information and data on Scotland's air quality, including an interactive map showing current pollution levels at each monitoring site.
- **Air Quality in Wales,** the website of the Welsh Air Quality Forum, can be found at <http://www.welshairquality.co.uk> . This website aims to provide comprehensive information about Air Quality in Wales, including current summaries, forecasts and information on Welsh Air Quality Forum events.
- **Northern Ireland Air.** This website, at <http://www.airqualityni.co.uk/> is provided by the Department of Environment in Northern Ireland. It contains information and data on air pollution in Northern Ireland, and related air quality issues. The website includes pages aimed at primary school age children, to help them learn about air pollution.

Defra web pages

Defra provides online information on environmental topics including air quality¹ as part of the Government's central website. Here, you can find information on what's going on "Inside Government", including information on Government policy and activity in the following areas.

- International and European standards of air quality
- National strategy on air quality
- Local air quality management
- The Clean Air Act
- Air quality evidence to support policy
- Industrial emissions

Defra also provides web pages to support **Local Air Quality Management**

<http://laqm.defra.gov.uk/> which contain useful information on the location of Air Quality

¹ <https://www.gov.uk/government/policies/protecting-and-enhancing-our-urban-and-natural-environment-to-improve-public-health-and-wellbeing>

Management Areas <http://aqma.defra.gov.uk>. Defra's pages on **Smoke Control Areas** <http://smokecontrol.defra.gov.uk/> provide information for the public and manufacturers about appliances and fuels.

The National Atmospheric Emissions Inventory <http://naei.defra.gov.uk/>. (NAEI) compiles estimates of emissions to the atmosphere from UK sources such as cars, trucks, power stations and industrial plant. These estimates of emissions are made in order to help find ways of reducing the impact of human activities on the environment and our health.

Defra also manages additional science and research web pages related to air quality including: Pollution Deposition Pages <http://pollutantdeposition.defra.gov.uk/>, Pollution Release and Transfer Pages <http://ptr.defra.gov.uk/> and Stratospheric Ozone and Ultra Violet (UV) Science Pages <http://ozone-uv.defra.gov.uk/>.

Twitter

You can follow UK-AIR on Twitter @DefraUKAIR for air quality forecasts and summaries of measurements from the UK Automatic Urban and Rural Network. These tweets are automated, and allow you to stay informed about current and forecast air quality including episodes of poor air quality. Occasional manual tweets are issued regarding interesting news items publications.

During weekdays, the automated system tweets updates about air pollution in the UK at 9am, 1pm and 5pm. At weekends and public holidays, the tweets are at 10am and 4pm. If levels are low, only one tweet a day will be issued in the morning.

A summary air quality forecast for the next 24 hours is tweeted daily, usually in the afternoon, allowing you to plan your activities accordingly.

The tweets will generally be labelled according to two categories:

1. **Latest data:** these tweets will report the latest measured levels and provide regional summaries. The UK regions used are the same as those used on UK-AIR. A link is provided to UK-AIR so users can find out more.
2. **Forecasts:** these tweets provide a headline of the latest air pollution forecast for the UK. A link will be provided to the Forecasting section of UK-AIR where the full forecast can be viewed. For example -

Forecast: High air pollution expected at urban & rural background locations in England & Wales due to ozone <http://bit.ly/HHMxp6> #ukair

Health advice and information on the UK Daily Air Quality Index should be considered in conjunction with the tweets, particularly when air pollution levels are elevated.

Please note this automated system provides outbound information only.

E-mail Bulletins

You can also subscribe to receive free e-mail messages on air quality <http://uk-air.defra.gov.uk/subscribe> . There are two options:

- Monthly mailing list. Subscribers to this mailing list get a monthly e-mail with updates on the latest air quality news, website updates and newly-available reports.
- E-mail bulletins. Subscribers can choose to receive:
 - Measurement: summary of last 24-hour's or last hour's air quality measurement data.
 - Forecasts: daily updated forecasts of UK air pollution concentrations up to 24-hours ahead
 - Alerts: if an Alert or Information Threshold in the EU Ambient Air Quality Directive 2008/50/EC) exceeded then an alert is issued.

You can unsubscribe from this service at any time.

Free Air Pollution Helpline

Defra also provides a free automated telephone service on 0800 55 66 77. This provides an air pollution forecast for the following 24 hours and latest data by region as well as health advice.

RSS Feeds and Plug-ins

Automatic XML feeds are available for the forecasts <http://uk-air.defra.gov.uk/rss/forecast.xml> and latest monitoring data http://uk-air.defra.gov.uk/rss/current_site_levels.xml to provide automatic, machine readable data sources. The XML file format allows the information to be published once and viewed by many different programs. This benefits the user who is able to subscribe to updates from UK-AIR or to aggregate the feed along with those from other sites into one place.

“Plug ins” are a beta development currently in evaluation which allows users to embed up to date forecasts into their own websites, tailored towards specific regions if required. These are available at <http://uk-air.defra.gov.uk/forecasting/forecast-embed>. The plug-in is aimed at making it easier for forecast information to be disseminated to a wider audience, and to increase the profile of UK air pollution forecasts. All the options come with a link to the UK-AIR website for further information and data.

Department for Environment Food & Rural Affairs

UK Air Pollution Forecast
Wednesday 10th April 2013

North East

In towns and cities near busier roads
Low (Index 3)

Elsewhere in towns and cities
Low (Index 3)

In rural areas
Low (Index 3)

- [View full forecasting summaries](#)
- [Health advice for air pollution](#)
- [Visit the Defra UK-AIR website for more information](#)

Where forecast pollution levels are given, a direct link to health advice and full forecasting summaries is also provided. There are three different sizes of plug-in available, to allow you to tailor the forecast to the style and space requirements of your website.

Air Pollution in the UK Reports

In September each year, Defra produces an annual report on air pollution in the UK during the previous year. This report summarises how air quality is assessed, where any exceedances of European Union Directive air quality limit values have occurred, how air quality varies across the UK, and how it has changed over time. This report is a valuable source of information on air quality and can be found at <http://uk-air.defra.gov.uk/library/annualreport/index> .

About the Daily Air Quality Index

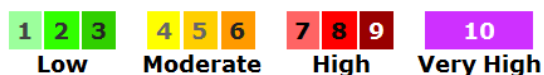
The forecasts, latest data and summaries on UK-AIR use the “Daily Air Quality Index” which provides information on short term exposure to air pollution. This is a way of describing outdoor air pollution levels in a clear and simple way, similar to a pollen index or sun index.

The Daily Air Quality Index (DAQI) covers the five pollutants that are most likely to affect health on a day-to-day basis:

- Ozone
- Nitrogen dioxide (NO₂)
- Sulphur dioxide (SO₂)
- Particulate matter (as PM₁₀)
- Fine particulate matter (as PM_{2.5}).

The Daily Air Quality Index uses a scale of 1 to 10 to describe air pollution, divided into three bands. Low air pollution is between 1 and 3, Moderate is between 4 and 6, High is between 7 and 9, and Very High is 10 on the scale. The scale is colour-coded as follows:

Index Bands



The pollutant concentrations that correspond to the air pollution bands are different for each pollutant, reflecting their typical concentrations in outdoor air, and the concentrations at which health effects may occur.

The Daily Air Quality Index comes in three parts:

- A. Instructions on how to use the index;
- B. The short-term health effects of air pollution and action that can be taken to reduce impacts;
- C. Health advice linked to each band.

It also includes advice for people whose health is sensitive to air pollution, and advice for the general population. This is given below:

A: How to Use the Daily Air Quality Index

- Step 1: Determine whether you (or your children) are likely to be at risk from air pollution.
 - Information on groups who may be affected is available below in section B, 'Additional information on the effects of air pollution'. Your doctor may also be able to give you advice.
- Step 2: If you may be at risk, and are planning strenuous activity outdoors, check the air pollution forecast.
- Step 3: Use the health messages corresponding to the highest forecast level of pollution as a guide.

B: Additional Information on the Effects of Air Pollution

The Daily Air Quality Index (DAQI) has been developed to provide advice on expected levels of air pollution. In addition, information on the short-term effects on health that might be expected to occur at the different bands of the index (Low, Moderate, High, Very High) is provided. It is possible that very sensitive individuals may experience health effects even on Low air pollution days. This advice applies to anyone experiencing symptoms.

Short-term effects of air pollution on health

Air pollution has a range of effects on health. However, air pollution in the UK does not rise to levels at which people need to make major changes to their habits to avoid exposure; nobody need fear going outdoors.

Adults and Children with lung or heart conditions - It is known that, when levels of air pollutants rise, adults suffering from heart conditions, and adults and children with lung conditions, are at increased risk of becoming ill and needing treatment. Only a minority of those who suffer from these conditions are likely to be affected and it is not possible to predict in advance who will be affected. Some people are aware that air pollution affects their health: adults and children with asthma may notice that they need to increase their use of inhaled reliever medication on days when levels of air pollution are higher than average.

Older people are more likely to suffer from heart and lung conditions than young people and so it makes good sense for them to be aware of current air pollution conditions.

The general population - At Very High levels of air pollution, some people may experience a sore or dry throat, sore eyes or, in some cases, a tickly cough even in healthy individuals.

Children need not be kept from school or prevented from taking part in games. Children with asthma may notice that they need to increase their use of reliever medication on days when levels of air pollution are higher than average.

Action that can be taken

When levels of air pollution increase it would be sensible for those who have noticed that they are affected to limit their exposure to air pollutants. This does not mean staying indoors, but reducing levels of exercise outdoors would be reasonable.

Older people and those with heart and lung conditions might avoid exertion on High pollution days.

Adults and children with asthma should check that they are taking their medication as advised by their health practitioner and may notice that they need to increase their use of inhaled reliever medication.

Adults with heart and circulatory conditions should not modify their treatment schedules on the basis of advice provided by the air quality index: such modification should only be made on a health practitioner's advice.

Some athletes, even if they are not asthmatic, may notice that they find their performance less good than expected when levels of a certain air pollutant (ground level ozone) are High, and they may notice that they find deep breathing causes some discomfort in the chest: This might be expected in summer on days when ground level ozone levels are raised. This does not mean that they are in danger but it would be sensible for them to limit their activities on such days.

C: Health Advice Linked to the Bandings

Air Pollution banding	Value	Accompanying health messages for at-risk groups and the general population	
		At-risk individuals*	General population
Low	1-3	Enjoy your usual outdoor activities.	Enjoy your usual outdoor activities.
Moderate	4-6	Adults and children with lung problems, and adults with heart problems, who experience symptoms , should consider reducing strenuous physical activity, particularly outdoors.	Enjoy your usual outdoor activities.
High	7-9	Adults and children with lung problems, and adults with heart problems, should reduce strenuous physical exertion, particularly outdoors, and particularly if they experience symptoms. People with asthma may find they need to use their reliever inhaler more often. Older people should also reduce physical exertion.	Anyone experiencing discomfort such as sore eyes, cough or sore throat should consider reducing activity, particularly outdoors.
Very High	10	Adults and children with lung problems, adults with heart problems, and older people, should avoid strenuous physical activity. People with asthma may find they need to use their reliever inhaler more often.	Reduce physical exertion, particularly outdoors, especially if you experience symptoms such as cough or sore throat.

*Adults and children with heart or lung problems are at greater risk of symptoms. Follow your doctor's usual advice about exercising and managing your condition. It is possible that very sensitive individuals may experience health effects even on Low air pollution days. Anyone experiencing symptoms should follow the guidance provided.

Other Sources of Information

As well as the sources of information on air quality provided by Defra, the following may also be useful:

The Committee on the Medical Effects of Air Pollutants (COMEAP) website has pages on the health effects of air pollutants www.comeap.org.uk/air

The Air Pollution Information System (APIS) website at <http://www.apis.ac.uk> provides information on various air pollutants, how they are formed and how they affect plant and animal species and their habitats. It also contains a database which can be used to identify average concentrations of certain pollutants at specified locations, and whether these exceed critical levels for different types of ecosystem.

London Air, the website of the London Air Quality Network, is managed by King's College London. As well as data, forecasts and summaries this website also provides downloadable mobile phone apps allowing Londoners to check out air quality in their city, while out and about.

Text Messaging Services such as “AirText” in London, “airAlert” in Sussex and “Know and Respond” (Scotland). These are aimed at people suffering from heart conditions, asthma or other breathing problems, whose health may be affected by episodes of poor air quality. These free services alert subscribers when poor air quality is forecast in their area for the day ahead. Users can register themselves or someone they care for, and get alerts sent straight to a mobile phone, home phone or email.



Information from Local Authorities. For information on specific air quality issues in your local area, please contact the Environmental Health department of your local authority, or visit your Local Authority's website. They will be able to help with issues such as:

- Whether your local authority has any Air Quality Management Areas.
- Whether your home is in a smoke control area, and if so, which fuels and appliances may be used.
- Local issues such as nuisance dust, smoke, or odour.

The Environment Agency website at <http://www.environment-agency.gov.uk/default.aspx> , and the Scottish Environment Agency (SEPA) website in Scotland (<http://www.sepa.org.uk/default.aspx>), provide information for businesses on topics including:

- Advice on preventing and minimising pollutant emissions
- Environmental Permitting and other environmental legislation.

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Any enquiries regarding this document/publication should be sent to us at: agevidence@defra.gsi.gov.uk